



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Weighing/Load Receiving Element
Portable or Stationary, Livestock
Models: ALXXL-4-V, MAS-W-XX, SAS-M and MAS-M2
 $n_{\max}$: 5000 (see specific parameters by model)
 $e_{\min}$: 1 lb to 5 lb (see specific parameters by model)
Capacity: 5000 lb to 25 000 lb (see specific parameters by model)
Platform: (see specific parameters by model)
Accuracy Class: III / III L

Submitted By:

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Standard Features and Options

Note: The Model ANXXL-Y On-board Weighing System was removed from this Certificate of Conformance to reduce confusion from other models listed below. See Certificate of Conformance 15-102 for information on the Model ANXXL-Y truck mounted On-board Weighing System.

Load Cells Used:

- Rice Lake Weighing Systems Model RL20000A-XXXX (NTEP CC 90-158) or NTEP Certified Equivalent

Installations must satisfy the relationship of $v_{\min} \leq d/\sqrt{N}$, where N = number of load cells

Livestock Scale Flooring:

- Smooth rubber mating (organic polymer) with a steel sub-floor
- Cleated polyurethane (elastomeric polymer) material with a steel sub floor

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

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Model ALXXL-4-V

- Model number denotes capacity where "XX" is the capacity in thousands of pounds.
- The "4" denotes a four load cell design. The "V" denotes an on-board or portable system. (M1 being on-board single axle, M2 being Onboard tandem axle, and P being a portable model).
- Onboard Weighing of Livestock, where the platform material is steel, wood, or a rubberized compound.
- Platform Size Tested was 8 ft W x 14 ft L: therefore, maximum width = 10 ft and maximum length = 17.5 ft

Model ALXXL-4-V Specifications and Parameters:

Model Number	Capacity Max (lb)	e _{min} (lb)	n _{max}	Class	Section Capacity (lb)
AL5L-4-V	5000	1	5000	III	5000
AL10L-4-V	10 000	5	2000	III	10 000
AL15L-4-V	15 000	5	3000	III	15 000
AL20L-4-V	20 000	5	4000	III / III L	20 000
AL25L-4-V	25 000	5	5000	III / III L	25 000

Model MAS-W-XX

- Model number denotes capacity where "XX" is the capacity in thousands of pounds.
- The "W" denotes the type of scale designed use: M for mobile (one or two axles), P for portable (no wheels) or LC for non-portable.
- Weighing of Livestock, where the platform material is steel, wood, or a rubberized compound.
- **Note:** P = Portable no wheels, the load can still be removed from the load cell for transporting to a new location, it just has to be transported using a flat bed truck; LC version, the load cannot be removed from the load cells, therefore Rice Lake considers this model as being in a permanent location or Non-portable
- Largest Platform Size Tested for the non-portable (LC) version was 10 ft W x 22 ft L: therefore, maximum width = 12 ft and maximum length = 27.5 ft\
- Largest Platform Size Tested for the portable (M) version was 8 ft W x 18 ft LL therefore, maximum width = 10 ft and maximum width = 22.5 ft

Model MAS-W-XX Specifications and Parameters:

Model Number	Capacity Max (lb)	e _{min} (lb)	n _{max}	Class	Section Capacity (lb)
MAS-W-5	5000	1	5000	III / III L	5000
MAS-W-10	10 000	5	2000	III / III L	10 000
MAS-W-15	15 000	5	3000	III / III L	15 000
MAS-W-20	20 000	5	4000	III / III L	20 000
MAS-W-25	25 000	5	5000	III / III L	25 000

Model SAS-M

- Model number denotes Single Animal Scale
- The "M" denotes mobile
- Platform material is steel, wood, or a rubberized compound.
- Platform Size Tested was 4 ft W x 8 ft L: therefore, maximum width = 5 ft and maximum length = 10 ft

Model SAS-M Specifications and Parameters:

Model	Capacity Max (lb)	e _{min} (lb)	n _{max}	Class
SAS-M	5000	1	5000	III



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Application: A Weighing/Load Receiving Element primarily used to weigh livestock. This device has the ability to be used in either a permanent installation, a portable installation or in an on-board application. In the on-board application, the transport system is integral to the weighing element and sensors are mounted on the device to sense angularity of the weighing element and restrict the weighing operation if the weighing element is not within acceptable limits, when interfaced with an NTEP certified and compatible indicating element.

Note: State or local Weights and Measures requirements may vary regarding the on-board use of this device. For both Portable and permanent installations, the State or local Weights and Measures will require verification of the device before it can be placed into service.

Identification: The required information is located on an identification plate riveted or voidable adhesive label attached to the side of the scale frame.

Sealing: There are no means of calibration at the scale. All calibration is done through the indicator/controller. The indicator/controller is sealed per the manufacturer's specifications.

Operation:

ALXXL-4-M1, ALXXL-4-M, MAS-M-XX, MAS-M2-XX

The on-board livestock models (M1 and M2) are Mobile Livestock Weighing Systems for weighing multiple animals. The operator deactivates the vehicle suspension to lower the cattle cage to the working height. The operator then activates lift mechanism to raise the scale into the working position. The weight registration on the display will show the live weight of the cage. Press the "zero" button on the controller to zero the scale (any gates should be in the closed position). The gates can then be opened and cattle moved onto the scale. Close the gates and press the "start" or "end" buttons to print the weight. Batches of cattle can continue to be weighed in the above fashion. Once weighing is complete at a location, the operator activates the lowering mechanism to lower the scale into the transport position. On the on-board versions, the operator then activates the frame mounted suspension to raise the cage to the transport height, and the Mobile Livestock Weighing System can then be towed to its next working location.

SAS-M

The single animal scale model SAS-M is designed to be transported from location to location on a specially designed cart. For weighing operations the scale is removed from the cart and placed on a surface. The weight indicator will blank if the scale is more than 3 degrees out of level in any direction.

Test Conditions: This certificate supersedes NTEP Certificate of Conformance 99-091A9 and was issued to certify flooring material changes from a steel sub-floor with smooth rubber mating (organic polymer) to a steel sub-floor with a cleated polyurethane (elastomeric polymer) material design and to change the side panels from a 1-piece design to a 3-piece design. An MAS-M2 (mobile), 8 ft x 18 ft, 20 000 lb capacity scale was tested at the manufacturer's facility. The device was tested to capacity using known test weights. Previous test conditions are listed below for reference.

Certificate of Conformance Number 99-091A9: This certificate supersedes NTEP Certificate of Conformance 99-091A8 and was issued to increase the size of the platform. An MAS-LC (non-portable), 10 ft x 22 ft, 25 000 lb capacity scale and an MAS-M (mobile), 8 ft x 18 ft, 20 000 lb capacity scale were tested by NTEP at the manufacturer's facility. The devices were tested to capacity using known test weight, used for over 21 days / 300 weighments, then tested again by NTEP. Previous test conditions are listed below for reference.

[Note: NTEP Certificate of Conformance 15-102 was issued to separate the Model ANXXL-Y from this certificate for clarification purposes. Models AN1.0L-3, AN15L-3, AN70L-4 and AN15L-4 have all been evaluated and tested by NTEP and the test conditions remain on this certificate and have been copied to the new certificate for reference. Also note that the certificate was initially issued under the name NORAC Systems International and was transferred to Rice Lake Weighing Systems (traceable to CC 99-091A6) per the sale of company.

Certificate of Conformance Number 99-091A8: This certificate supersedes Certificate of Conformance Number 99-091A7 and is issued to include an option for livestock weighing. As a representative sample a SAS-M scale (4 ft x 8 ft four load cell design with rubberized compound deck) was interfaced with a Rice Lake Model 920i-2A Indicating element (NTEP CC 01-088). Initially the scale was set up and tested by conducting two sets of increasing / decreasing load and shift tests over each corner with 1500 lb of



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known test weights. Increasing / decreasing load tests were also conducted to capacity using 5 000 lb of known test weights. Out of level testing was accomplished using the trailer's independent suspension and wood blocks. Tests were conducted at the device's maximum working angle (just below where the indicator would shut off). The unit was then sealed and transported to a farm then used for over 20 days with over 300 weighments using actual livestock (non-simulated weighments). The scale was again set up at the original test site and tests were repeated as in initial test.

Certificate of Conformance Number 99-091A7: This Certificate supersedes Certificate of Conformance number 99-091A6 and was issued without additional testing to indicate a change in model numbers. The ALXXL-4-V models are now MAS-M (designating mobile), MAS-P (designating portable), and MAS-LC (designating not portable). Note the 4 in the model designation is no longer needed as the livestock series all have four load cells. This NTEP Certificate of Conformance covers those devices previously sold and installed under the previous model designations and the new model designations.

Certificate of Conformance Number 99-091A6: This Certificate supersedes Certificate of Conformance number 99-091A5 and was issued without additional testing to indicate transfer of the NTEP Certificate of Conformance Number from NORAC Systems International to Rice Lake Weighing Systems. The NTEP Certificate of Conformance 99-091A5, though inactive, remains in effect to cover those devices previously sold and installed under the original name.

Certificate of Conformance Number 99-091A5: This Certificate supersedes Certificate of Conformance Number 99-091A4 and is issued to specify the platform material that may be used with the ALXXL model. A model AL20L-4 (20 000 x 5 lb, 8' x 14') trailer mounted weighing element was interfaced with a Western Scale model M2000 indicating element (NTEP CC number 00-076) for the purpose of evaluating the rubberized platform material. Increasing/decreasing load and shift tests were conducted to 20 000 lb. Out of level tests were conducted. No additional testing was deemed necessary.

Certificate of Conformance Number 99-091A4: This Certificate supersedes Certificate of Conformance Number 99-091A3 and is issued to clarify the option for livestock weighing on this Certificate.

Certificate of Conformance Number 99-091A3: This certificate supersedes Certificate of Conformance Number 99-091A2 and is issued to include an option for onboard livestock weighing. As a representative sample an AN15L-4 scale (7 ft x 14 ft four load cell design with wood deck) was interfaced with a Western Scale Co. Model M2000A-xx Indicating element (NTEP CC 00-076). Initially the scale was set up and tested by conducting two sets of increasing / decreasing load and shift tests over each corner with 4400 lb of known test weights. Increasing / decreasing load tests were also conducted to capacity using 14 990 lb of known test weights. Out of level testing was accomplished using the trailer's independent suspension and wood blocks. Tests were conducted at the device's maximum working angle (just below where the indicator would shut off). The scale was then used for over 20 days with over 300 weighments using actual livestock (non simulated weighments), while being towed more than 300 miles. The scale was again set up, and tests were repeated as in initial test.

Certificate of Conformance Number 99-091A2: This certificate supersedes Certificate of Conformance Number 99-091A1 and is issued without further testing to correct information contained in the previous test conditions. The original test conditions are listed below for reference.

Certificate of Conformance Number 99-091A1: This certificate supersedes Certificate of Conformance Number 99-091 and is issued to include larger capacities in the family of onboard-weighing systems. A model AN70L-4, trailer mounted scale, 77 000 lb by 10 lb, (35 000 x 5 kg) capacity, with a load receiving platform that measured 29'4" by 6'11" was submitted. For the purpose of this evaluation the scale was interfaced with a Western Scale Co. Model M2000A-xx Indicating Element (Certificate of Conformance number 00-076). The device was set up to evaluate tolerances for 5 lb divisions for capacities from 30 000 lb to 50 000 lb for Class IIIL. The emphasis of the evaluation was on the design, operation, performance, permanence and marking requirements. The scale was loaded by placing the known test weights directly on the load receiving platform. Out of level testing was accomplished using the manufacturer's hydraulic incline fixture. Several increasing/decreasing load and shift tests were conducted with the vehicle level and tilted in all four directions to 6 degrees from level (front, back, left side and right side). These tests were conducted to the capacity of the scale, 77 000 lb (35 000 kg). The vehicle was tilted past 6 degrees to ensure the indicator would blank out properly. The scale was used for a period of 20 days with the minimum requirements for an on-board weighing system being met and re-tested in the same manner as above.



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Certificate of Conformance Number 99-091: The emphasis of the evaluation was on the design, operation, performance, permanence and marking requirements. For the purpose of this evaluation three models were tested. Two truck-mounted (Models AN1.0L-3 and AN15L-3) and a trailer mounted (Model AN40L-4) were interfaced with a Western Scale Co. Model DF2000 (Certificate of Conformance Number 87-029). The scales were loaded by placing certified weights on racks specially designed for load receiving elements. Out-of-level testing was accomplished using the manufacturer's hydraulic incline fixture. Several increasing/decreasing load and off center loading tests were conducted using 1000 lb, 15 000 lb and 40 000 lb of known test weights. Testing was conducted with the devices out-of-level 6 degrees in all four directions (i.e., front, back, right side, left side). Testing was also conducted with the devices three degrees out-of-level in a twist condition (i.e., one rear set of wheels raised). The devices were tilted beyond the maximum angle to insure the indicator would blank-out properly. The scale was used for a period with the minimum requirements being met and re-tested in the same manner.

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Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2015 Edition. *NCWM Publication 14 Measuring Devices*, 2015 Edition.

Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Information Reviewed By: S. Patoray, L. Bernetich (NCWM) 99-091A3, 99-091A4; J. Truex (NCWM) 99-091A5, 99-091A6, 99-091A7, 99-091A8, 99-091A9; J. Gibson (NCWM) 99-091A10

Examples of Device:



Model ALXXL-4-V & Model MAS-M



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Model ALXXL-4-V



Model MAS-M2



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Model MAS-LC